

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A gait monitoring system for monitoring gait characteristics of a subject, said system comprising:
 - a sensor module ~~touching the~~configured to touch an upper surface of a ~~floor that detects floor.~~ the sensor module configured to detect at least one of floor acceleration, floor vibration, and floor deflection and to provide acceleration, vibration, and deflection signal, wherein the subject ~~walks~~can walk on the upper surface of the floor in proximity to said sensor module; and
 - a processor module that ~~analyzes~~is configured to analyze the acceleration, vibration, and deflection signal ~~for determining~~and to determine gait ~~characteristics.~~characteristics based on the signal,
 - wherein, the processor module is configured to determine the gait characteristics based on the signal from only a single sensor module.
2. (Previously Presented) The system of claim 1, further comprising: an output module for receiving data indicative of the gait characteristics.
3. (Previously Presented) The system of claim 2, wherein said output module comprises at least one of display, alarm, memory storage, communication device, printer, buzzer, PDA, lap top computer, computer, audio or visual alarm, and light.
4. (Previously Presented) The system of claim 3, wherein said communication device comprises at least one of modem, pager, network interface, Ethernet card, serial communications port, parallel communications port, telephone, and PCMCIA slot and card.

5. (Original) The system of claim 1, wherein said sensor module and processor module are in wireless communication.

6. (Previously Presented) The system of claim 5, wherein said wireless communication comprises at least one of RF link, an infrared, cellular phone link, optical and electromagnetic.

7. (Original) The system of claim 1, wherein said sensor module and processor module are in a hard wired communication.

8. (Previously Presented) The system of claim 7, wherein said hard wired communication comprises at least one of electronic, integrated circuit, electromagnetic, wire, cable, fiber optics, a phone line, twisted pair, and coaxial.

9. (Original) The system of claim 1, further comprising: a rate-of-travel detector to determine the rate-of-travel of the subject.

10. (Previously Presented) The system of claim 9, wherein said rate-of-travel detector comprises at least one of a plurality of beam breaks, floor switches, and door switches.

11. (Previously Presented) The system of claim 9, wherein said rate-of-travel detector comprises at least one of ultrasonic communication, IR communication, laser communication, ground radar communication, wide band radar communication, and doppler communication.

12. (Currently Amended) The system of claim 9, wherein said gait characteristics of the subject includes at least ~~one~~two of step count, pace, normal gait condition, limp, shuffle, falls, average walking velocity, step length, and stride length.

13. (Currently Amended) The system of claim 1, wherein said gait characteristics of the subject includes at least ~~one~~two of step count, pace, normal gait condition, limp, shuffle, and falls.
14. (Currently Amended) The system of claim 1, wherein the ~~gait characteristics of the subject includes falls~~the processor is configured to distinguish between steps of a human being and a fall of a human being.
15. (Previously Presented) The system of claim 1, further comprising an archival storage module.
16. (Currently Amended) The system of claim 15, wherein the processor module is configured to perform at least two of longitudinal analysis of gait characteristics, pattern recognition, and identification determination, wherein identification determination associates gait characteristics with a particular subject; and said archival storage module stores the at least ~~one~~two of longitudinal analysis of gait characteristics, pattern recognition, and identification determination.
17. (Canceled)
18. (Currently Amended) The system of claim 1, further comprising: a second processor module, wherein said second processor module ~~analyzes the~~ is configured to analyze gait characteristics, pattern recognition, and identification determination ~~data-data, the identification determination data associating~~ gait characteristics with a particular subject.
19. (Previously Presented) The system of claim 1, wherein the subject is one of a human and an animal.

20. (Previously Presented) The system of claim 1, wherein the subject is an animate or inanimate object.
21. (Currently Amended) The system of claim 1, further comprising a fall module ~~that processes~~configured to:
process data received from said ~~acceleration, vibration, and deflection module sensor~~
module;
recognize data that is consistent with the fall of a human body; and
provide notification of a fall based on the recognized data.
22. (Currently Amended) The system of claim 1, further comprising a step module ~~that processes~~configured to process data received from said ~~acceleration, vibration, and deflection sensor~~ module.
23. (Original) The system of claim 1, further comprising: a second processor module in communication with said system.
24. (Currently Amended) A method for monitoring gait characteristics of a subject, said method comprising:
detecting at least one of floor acceleration, floor vibration, and floor deflection to provide acceleration, vibration, and deflection signal, wherein said detecting ~~step~~ is provided by a sensor module touching ~~the~~an upper surface of a floor, and wherein the subject walks on the upper surface of the floor in proximity to said sensor module; ~~and~~
analyzing the acceleration, vibration, and deflection signal forsignal; and
determining gait characteristics based on the signal,
wherein, the gait characteristics are determined based on the signal from only a single sensor module.

25. (Previously Presented) The method of claim 24, further comprising: outputting data indicative of the gait characteristics.
26. (Previously Presented) The method of claim 25, wherein said outputting is provided by an output module that comprises at least one of display, alarm, memory storage, communication device, printer, buzzer, PDA, lap top computer, computer, audio or visual alarm, and light.
27. (Previously Presented) The method of claim 26, wherein said communication device comprises at least one of modem, pager, network interface, Ethernet card, serial communications port, parallel communications port, telephone, and PCMCIA slot and card.
28. (Original) The method of claim 24, further comprising: detecting rate-of-travel of the subject to determine the rate-of-travel of the subject.
29. (Previously Presented) The method of claim 28, wherein said detecting the rate-of-travel is provided by a rate-of-travel detector.
30. (Previously Presented) The method of claim 28, wherein said detecting the rate-of-travel comprises at least one of ultrasonic communication, IR communication, laser communication, . ground radar communication, wide band radar communication, and doppler communication.
31. (Currently Amended) The method of claim 28, wherein the gait characteristics of the subject includes at least ~~one~~two of step count, pace, normal gait condition, limp, shuffle, falls, average walking velocity, step length, and stride length.
32. (Currently Amended) The method of claim 24, wherein the gait characteristics of the subject includes at least ~~one~~two of step count, pace, normal gait condition, limp, shuffle, and falls.

33. (Previously Presented) The method of claim 24, wherein the ~~gait characteristics of the subject includes falls~~ analyzing further comprising distinguishing between steps of a human being and a fall of a human being.

34. (Original) The method of claim 24, further comprising: storing archival information or data.

35. (Currently Amended) The method of claim 34, wherein the storing of archival information or data is provided by an archival storage module that stores at least ~~one~~ two of longitudinal analysis of gait characteristics, pattern recognition, and identification ~~determination.~~ determination, the identification determination associating gait characteristics with a particular subject.

36. (Previously Presented) The method of claim 35, further comprising: analyzing the gait characteristics, pattern recognition, and identification determination data.

37. (Previously Presented) The method of claim 24, wherein the subject is one of a human and animal.

38. (Previously Presented) The method of claim 24, wherein the subject is an animate or inanimate object.

39. (Currently Amended) The method of claim 24, further comprising: ~~analyzing fall data received from the acceleration, vibration, and deflection signal~~ automatically identifying signals indicative of a human body falling to determine fall data.

40. (Previously Presented) The method of claim 24, further comprising: analyzing step data from the acceleration, vibration, and deflection signal.

41. (Currently Amended) A computer program product comprising computer usable medium having computer logic embedded thereon for enabling at least one processor in a computer system to monitor gait characteristics of a subject, said computer logic ~~comprising~~ configured to cause the computer system to:

~~detecting~~ receive at least one of floor acceleration, floor vibration, and floor deflection to ~~provide acceleration, vibration, and deflection~~ signal, wherein said ~~detecting~~ step signal is provided by a sensor module touching ~~the~~ an upper surface of a floor, and wherein the subject ~~walks~~ can walk on the upper surface of the floor in proximity to said sensor module; and

~~analyzing~~ analyze the acceleration, vibration, and deflection ~~signal for determining~~ signal; and

determine gait characteristics ~~characteristics based on the signal~~.

wherein, the gait characteristics are determined based on the signal from only a single sensor module.

42. (New) A gait monitoring system, said system comprising:
a sensor device comprising:

a housing configured to be placed on a floor surface in a freestanding position;

and

a sensor configured to:

touch the floor surface;

detect at least one of floor acceleration, floor vibration, and floor deflection; and

generate a signal based on the detected at least one of floor acceleration, floor vibration, and floor deflection;

a processor unit configured to communicate with the sensor device and determine gait characteristics based on the signal, the determined gait characteristics including identifying at least two of a normal gait characteristic, an abnormal gait characteristic and a human body fall; and

an output device configured to output the determined gait characteristics, the output including different outputs for the at least two of normal gait characteristic, abnormal gait characteristic and human body fall.

43. (New) The system of claim 42, wherein the processor unit is configured to determine the gait characteristics based on the signal from only a single sensor device.